



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D5425-043
Job Sheet 170125



Part No: D5425-043

Job Qty: 1 ea

Part Name: Float Skidtube Assembly



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/10/18

Job Tracking No:

Due Date: 1/19/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: IPP REV:A 17.11.02 NEW ISSUE DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		1/16/18	0.00	0.00	Start Up Skid tubes-2		A.P 2018-01-11
110	Skid tubes	1 pcs		1/17/18	0.00	8.24	Skid tubes-3		
120	CNC Vertical Machining	1 pcs		1/18/18	0.00	22.77	HAAS1-4		KT 18-01-19
130	QC	1 pcs		1/18/18	0.00	0.00	QC2 Machining-4		KT 18-01-19
140	QC	1 pcs		1/18/18	0.00	0.00	QC8 Machining-4		2018/01/22
150	HandFinish	1 pcs		1/18/18	0.00	0.24	HandFinish1		2018/01/24 JSL
160	QC	1 pcs		1/18/18	0.00	0.00	QC7-5		
170	CNC Bend Skid tubes	1 pcs		1/18/18	0.00	2.63	CNC Bend Skid tube		
180	QC	1 pcs		1/18/18	0.00	0.00	QC5		
190	Skid tubes	1 pcs		1/18/18	0.00	8.24	Skid tubes-3		
200	QC	1 pcs		1/18/18	0.00	0.00	QC5		
210	HandFinish	1 pcs		1/18/18	0.00	0.24	HandFinish6		
220	QC	1 pcs		1/18/18	0.00	0.00	QC7-5		
230	Skid tubes	1 pcs		1/18/18	0.00	8.24	Skid tubes-3		
240	QC	1 pcs		1/18/18	0.00	0.00	QC5		2018-1-25
250	HandFinish	1 pcs		1/18/18	0.00	0.24	HandFinish6		2018/01/19
260	QC	1 pcs		1/18/18	0.00	0.00	QC7-5		
270	SprayPaint	1 pcs		1/18/18	0.00	0.00	Spray Paint		2018-01-31
280	QC	1 pcs		1/18/18	0.00	0.00	QC14		2018-01-31
290	HandFinish	1 pcs		1/19/18	0.00	0.24	HandFinish4		2018-01-31
300	QC	1 pcs		1/19/18	0.00	0.00	QC5		
310	Packaging	1 pcs		1/19/18	0.00	0.00	Packaging3-2		
320	QC21-SA	1 Ea		1/19/18	0.00	0.00	QC21		

Part Op 110 - 1-Cut tube to finished length as per Dwg. 2-Deburr ends as per Dwg.

Descriptions: 120 - 1-Machine as per Dwg. and Folio FB536 DWG REV: AA FOLIO REV: AA 2-Deburr as per Dwg.

150 - 1-Scrub inside of tube with medium scotchbright.

170 - 1-Bend Aft end of tube as per Dwg. and Folio AA. Insert Bending mandrel DT 10328 at AA " from aft end. Use buggy A,B,C AND DT AA A & B. to stabilize tube. HEIGHT AA 2-Bend Forward end of tube as per Dwg. and Folio AA. Insert Bending mandrel DT 10328 at AA " from fwd end. Use buggy A,B,C AND DT AA A & B. To stabilize tube. HEIGHT AA 3-Record dimensions on work order.

180 - #NAME?

190 - 1-Drill remaining holes of section I-I using DT AA 2-Drill remaining holes of section J-J using DT AA

200 - 3-Open holes to finished size as per Dwg. 4-Deburr holes per QSI002 section 4.2.3 and blow out all chips from inside of tube.

230 - 1-Wet install crossbolt spacers of Section G-G. Swage to 0.437 as per Dwg. PRIMER B M137715 Start

P10: 038908

JAN 30 2018

DAS
13
0-00

Plex 1/10/18 1:31 PM Dart.lajeunesse.mar

Time: 2:00 Finish Time: 18-01-27 ***CURE TIME 8 HRS. BEFORE PROCEEDING TO NEXT STEP***
 2-Swage crossbolt spacers of Section F-F to 0.313 as per Dwg. 3-Trim / Grind flush, deburr. 4-Identify per QSI 044 6.1
 250 - ***DO NOT SUBMERGE TUBE IN DEOXODIZER***
 270 - ***PLUG ALL CROSSBOLT SPACER HOLES PRIOR TO PRIME AND PAINT*** 1-PRIME AS PER DWG AND
 QSI005 4.2.1.3.3 PRIMER BATCH: _____ 2-PAINT AS PER DWG AND QSI005 4.2.2.4 PAINT
 BATCH: _____
 290 - 1-Install FWD and AFT cap seal with sikaflex-241 / 291 B A138654 Exp: 18/04 Start time: _____
 Finish time: _____ 2-Coat all exposed hardware with LPS Procyon. Remove any excess off with MEK degreaser.
 A/R LPS Procyon B A133690

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	D6028-195 <u>B154501-42</u>	1	20	0	0
230-Skidtubes	D5512-1 <u>501858</u>	42	66	0	0
	D5518-1 <u>5018582</u>	18	78	0	0
290-HandFinish	AN3C5A <u>5019396</u>	6	1,462	0	0
	D3672-1 <u>F150074</u>	6	1,133	0	0
	D5483-041 <u>5004889</u>	1	0	0	0
	D5484-041 <u>5004845</u>	1	0	0	0
	NAS1149C0332R <u>5019380-1</u>	6	4,369	0	0

Part Specifications

Specifications could not be found.

Plex 1/10/18 1:31 PM Dart.lajeunesse.marie

000324

and 19 Jan 2019



DQA: _____ Date: DAS 53
QA Closed: 5:00 JUL 26 2018

Work Order update only

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order: 170125
Part No. D5425-043
NCR No. 19-7187
Date: 18/01/10 Step #: 190

DISPOSITION

AGAINST DEPARTMENT/PROCESS

Engineering ☒ Quality ☐ Other ☐
Water Jet ☐ Prod. Eng. Coord. ☐
Rec/Store/Packaging ☐ Supplier ☐
Skid-tube ☐ Cross tube ☐
Machining ☐ Small Fab ☐
Thermoforming ☐ Finishing ☐
Large Fab ☐ Composite ☐
QTY Effective: 1

MRB (QSI042) Approval
DAS 12 18/1/10
9:00

Completed By
S. Sloggett

Lead hand / Supervisor
Approval Verification
DAS 9 APR 24 2018
9:00

QC / QA Coordinator
Approval
DAS 9 APR 24 2018
9:00

Description Work Order Deviation

Disposition

- current hole diameters can cause crossbolt spacers to bend in off CL holes
- rear off CL holes to 0.383 ± 0.002 as shown in attached amended drawing (Detail W and P)
- final hole size within original tolerance, no deviation required for QC

Root Cause

Environment ☒ Design ☒ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐
No Re-verification ☒ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐

Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ OTHER: _____

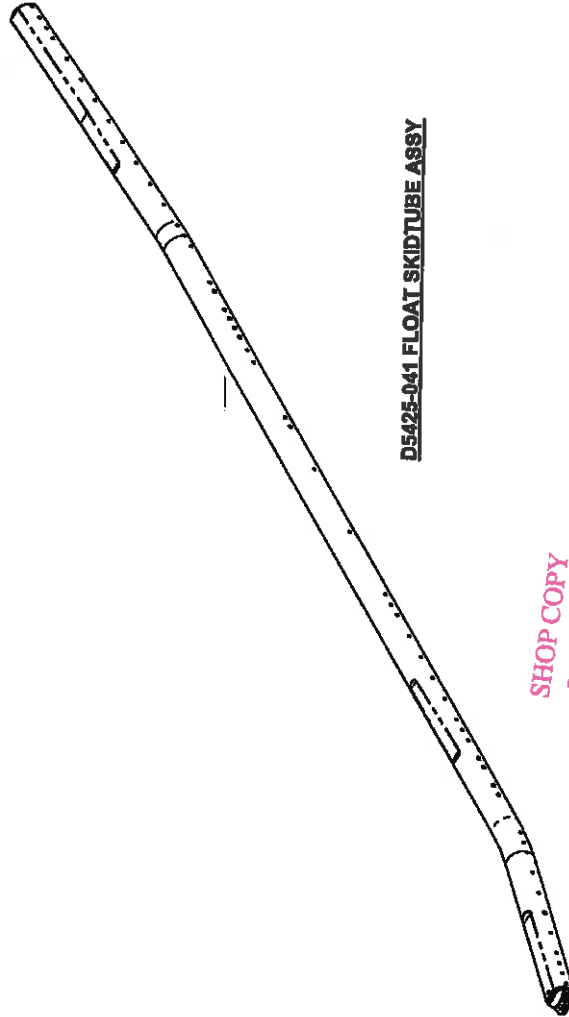
Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☒

Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐

Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐

H:/FORMS/Quality Assurance\approved QA\NCRWO Rev I

QTY	PIN	DESCRIPTION
X	D5425-041	FLOAT SKIDTUBE ASSY
6	D3872-1	WASHER
1	D5425-1	FLOAT SKIDTUBE
1	D5489-041	TOW CAP ASSY
1	D5484-041	AFT CAP ASSY
12	D5512-1	CROSSBOLT SPACER
37	D5518-1	CROSSBOLT SPACER
8	AN5C5A	BOLT
6	NA51149C0332R	WASHER



D5425-041 FLOAT SKIDTUBE ASSY

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 120125415
1801-10

UNDER REVIEW

URP17-729 NO

A		NEW ISSUE		NO		17.07.19	
REV.	DESCRIPTION	NO	BY	DATE			
DESIGN		NO					
DRAWN		NO					
CHECKED		AJS					
MFG. APPR.		DP					
APPROVED		VM					
DATE	17.07.19	DS					
DART AEROSPACE USA, INC.				REV. A			
EUGENE, OR				DRAWING NO. D5425			
				SHEET 1 OF 10			
				TITLE 412 FLOAT SKIDTUBE			
				SCALE NTS			
				DATE 17.07.19			

RELEASED
R 2017-10-31
1801-10

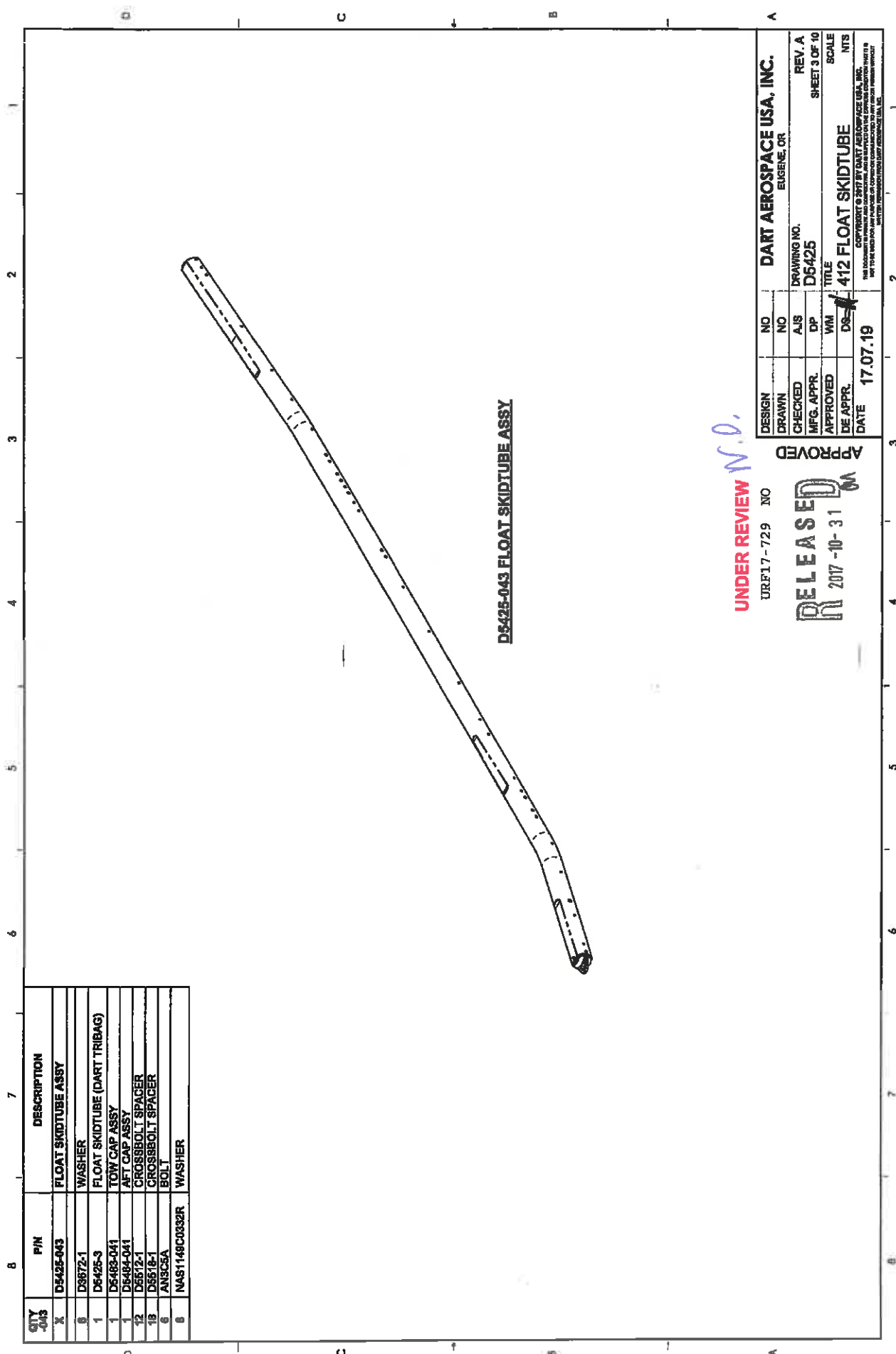
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THIS DOCUMENT IS UNCLASSIFIED
DATE 10-31-17 BY 1801-10



DESIGN	NO	DART AEROSPACE USA, INC. EUGENE, OR	REV. A
DRAWN	NO		
CHECKED	AJS		
MFG. APPR.	DP		
APPROVED	WM		
DATE	17.07.19	412 FLOAT SKIDTUBE	SHEET 2 OF 30
DE APPR.	DS	412 FLOAT SKIDTUBE	SCALE
			NTS

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 THIS DOCUMENT IS A WORK IN PROGRESS, AND IS SUBJECT TO THE FOLLOWING CONDITIONS:
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NOTES:
 (1) MATERIAL: N/A
 (2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 PRIME PER DART QSI 005 4.2,4.3
 PAINT PER DART QSI 005 4.2,4.3
 (3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 (4) UNITS: INCHES UNLESS OTHERWISE NOTED
 (5) BREAK SHARP EDGES: N/A
 (6) IDENTIFICATION: IDENTITY PER QSI 044 8.1
 (7) WEIGHT: 54.6lbs
 COAT ALL EXPOSED FASTENERS WITH LPS "LPS PROCTON"



QTY	P/N	DESCRIPTION
1	D5425-043	FLOAT SKIDTUBE ASSY
1	D3872-1	WASHER
1	D5425-3	FLOAT SKIDTUBE (DART TRIBAG)
1	D5483-041	TOW CAP ASSY
1	D5484-041	AFT CAP ASSY
12	D5512-1	CROSSBOLT SPACER
18	D5518-1	CROSSBOLT SPACER
6	AN3CSA	BOLT
8	NAS1148C0332R	WASHER

D5425-043 FLOAT SKIDTUBE ASSY

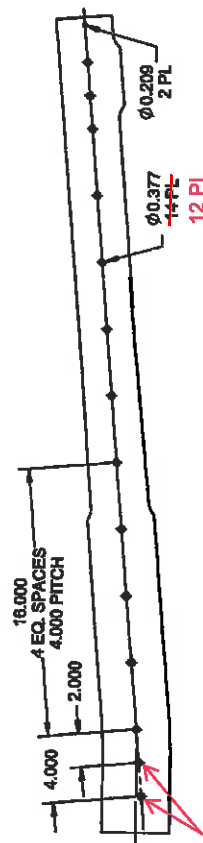
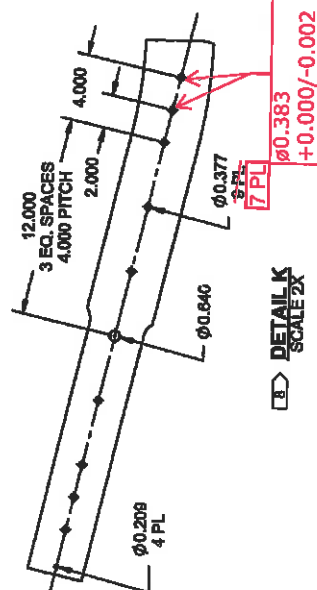
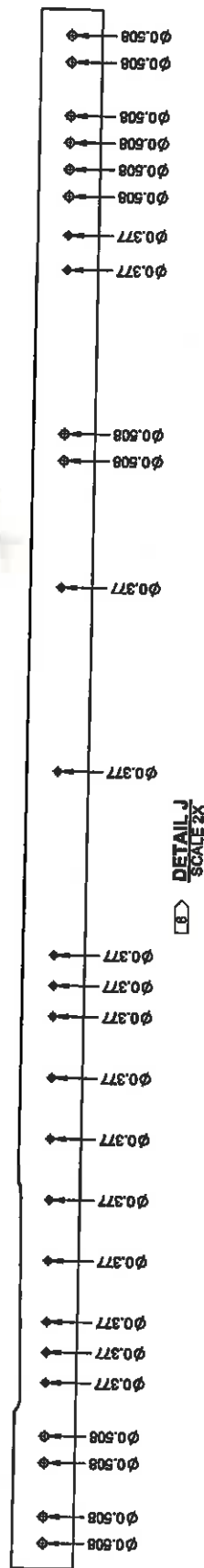
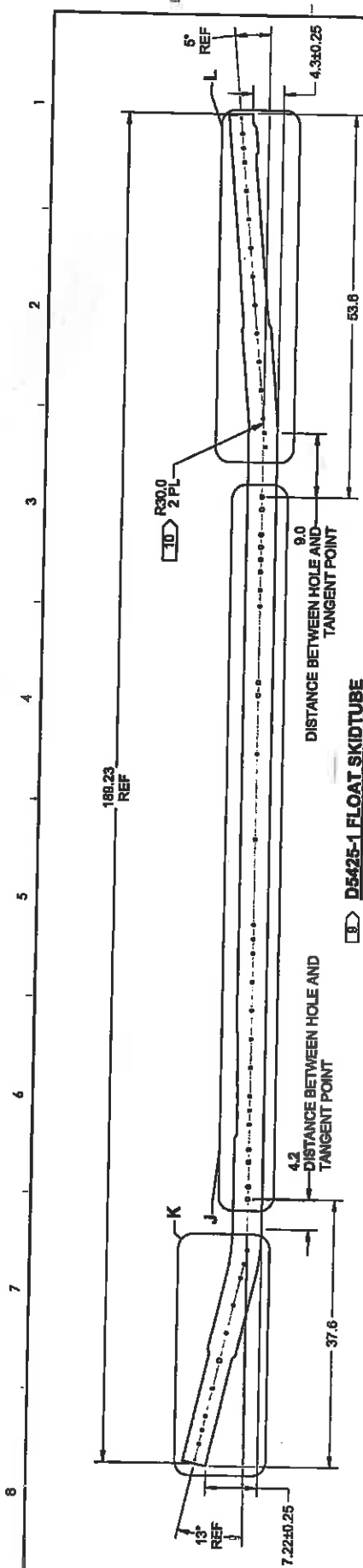
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URF17-729 NO

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N 2017-10-31

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DRAWN	NO	EUGENE, OR	
CHECKED	AJS	DRAWING NO.	REV. A
MFG. APPR.	DP	D5425	SHEET 3 OF 10
APPROVED	WM	TITLE	SCALE
DE APPR.	D5-1	412 FLOAT SKIDTUBE	NTS
DATE	17.07.19		

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DETAIL 1
SCALE 2X

DETAIL K
SCALE 2X

NOTES:

1) MATERIAL: MAKE FROM D5425-1 DRILL
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) SURFACES: FINISHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 82.57 lbs
8) ALL CENTERLINE HOLES THRU, BOTH SIDES AND ALIGNED WITH
9) MAXIMUM TWIST ALLOWANCE 3° BETWEEN FWD AND AFT BEND
10) MAXIMUM 5% CRUSHING PER QSI 038 7.1

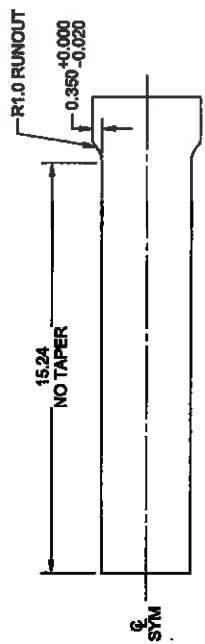
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NO
URF17-729
APPROVED

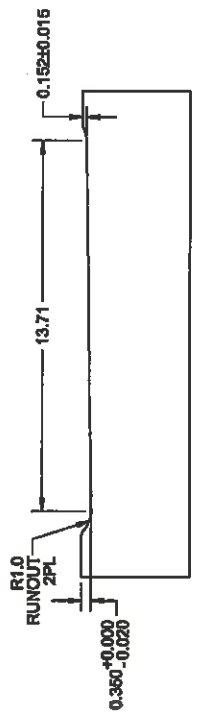
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DRAWN	NO	EUGENE, OR	
CHECKED	AJS	DRAWING NO.	
MFG. APPR.	DP	D5425	
APPROVED	WM	TITLE	
DATE	17.07.19	412 FLOAT SKIDTUBE	
		REV. A SHEET 6 OF 10 SCALE NTS	

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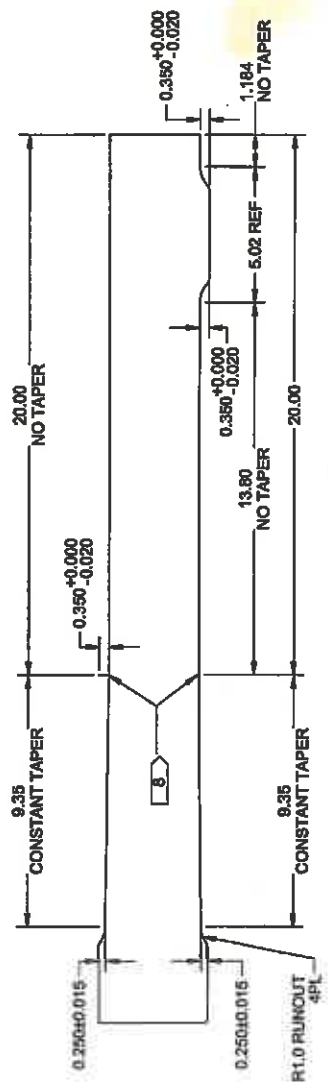
1 2 3 4 5 6 7



DETAIL AE
SCALE 3X



DETAIL AF
SCALE 3X



DETAIL AG
SCALE 3X

UNDER REVIEW NO:

URF17-729 NO

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2017-10-31

DESIGN	NO	NO	DART AEROSPACE USA, INC.
DRAWN	NO	NO	EUGENE, OR
CHECKED	AJS	DP	DRAWING NO. D5425
MFG. APPR.	WM	DS	REV. A SHEET 10 OF 10
APPROVED	DE APPR.	DATE	17.07.19
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SCALE NTS			
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DART AEROSPACE LTD		Work Order:
Description: Float Skid Tube		Part Number: D5425-043
Inspection Dwg:	Rev: A	Page 1 of 1

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.500	±0.010	0.500	✓		Kt.05	verm.
2.790	±0.010	2.790	✓		" "	" "
10.790	±0.010	10.790	✓		CNC-02	verm
14.790	±0.010	14.790	✓		TAPE	—
43.116	±0.010	43.116	✓			
44.866	±0.010	44.866	✓			
48.366	±0.010	48.366	✓			
60.366	±0.010	60.366	✓			
64.366	±0.010	64.366	✓			
74.366	±0.010	74.366	✓			
121.069	±0.010	121.069	✓			
123.324	±0.010	123.324	✓			
125.866	±0.010	125.866	✓			
127.616	±0.010	127.616	✓			
129.366	±0.010	129.366	✓			
131.116	±0.010	131.116	✓			
134.616	±0.010	134.616	✓			
136.366	±0.010	136.366	✓			
0.500	±0.010	0.500	✓		Kt.05	verm
2.690	±0.010	2.690	✓		" "	" "
4.690	±0.010	4.690	✓		" "	" "
18.690	±0.010	18.690	✓		TAPE	—
15.24	±0.030	15.24	✓		" "	" "
R1.0	±0.100	R1.0	✓		R-H	—
0.350	±0.005	0.347	✓		machine	—
0.350	±0.005	0.348	✓		" "	" "
R1.0	±0.100	R.10	✓		B-G	—
13.71	±0.030	13.71	✓		TAPE	—
0.152	±0.015	0.142	✓		machine	—
0.250	±0.015	0.245	✓		" "	" "
9.35	±0.030	9.35	✓		TAPE	—
0.350	±0.005	0.342	✓		machine	—

Measured by: 1 Kt	Checked by: [Signature]	QC Inspector:
Date: 18-01-19	Date: 18/01/22	Date:

Engineering Approval: (If necessary)	Date:
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Rev	Date	Change	Revised by	Approved
B	14.07.31	New Issue	KJ	

1/31/2018

Print



Dart Hawkebury
1270 Aberdeen St Hawkebury, ON K6A 1K7 Canada
Tel (613) 632-5200

Purchasing Receipts

PO No	Supplier	Line Item No	Ref No	Terms	Purchased item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Serial No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Suppl Nam
PO038908	ATE003-VC	1	1	Net 30	OUTSIDE SERVICES	paint white D5425-043 job 168536				1	1/31/2018	1			Inactive	1/31/2018	\$ 225.00 / Ea	0		\$225.00	Atelier Debosse
		2									1		Inactive	1/31/2018	\$ 225.00 / Ea	0		\$225.00	Atelier Debosse		
		3							2		2		Inactive	1/31/2018	\$ 25.00 / Ea	0		\$50.00	Atelier Debosse		
		4									2		Inactive	1/31/2018	\$ 25.00 / Ea	0		\$50.00	Atelier Debosse		
		5									2		Inactive	1/31/2018	\$ 25.00 / Ea	0		\$50.00	Atelier Debosse		
		6										2		Inactive	1/31/2018	\$ 25.00 / Ea	0		\$50.00	Atelier Debosse	
Total:										10		10								\$525.00	

Plex 1/31/2018 11:23 AM dart.Gagnon.Michelle



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO038908**

Supplier: ATE003-VC
Atelier Debosselage
358 Principale
Calumet
QC
J0V 1B0 Canada
Phone: 819 242 5633

PO No: PO038908
PO Date: 1/30/18
Due Date: 1/31/18
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Part	Supplier Part No	Item No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1		Paint	OUTSIDE SERVICES	paint white D5425-043 job 168535	Firmed	1/31/18	1 Ea	0 Ea	1 Ea	\$225.00/Ea	\$225.00
2		Paint	OUTSIDE SERVICES	paint white D5425-043 job 170125	Firmed	1/31/18	1 Ea	0 Ea	1 Ea	\$225.00/Ea	\$225.00
3		Paint	OUTSIDE SERVICES	paint white D5466-1 job 171077	Firmed	1/31/18	2 Ea	0 Ea	2 Ea	\$25.00/Ea	\$50.00
4		Paint	OUTSIDE SERVICES	paint white D5469-1 job 171080	Firmed	1/31/18	2 Ea	0 Ea	2 Ea	\$25.00/Ea	\$50.00
5		Paint	OUTSIDE SERVICES	paint white D5468-1 job 171079	Firmed	1/31/18	2 Ea	0 Ea	2 Ea	\$25.00/Ea	\$50.00
6		Paint	OUTSIDE SERVICES	paint white D5467-1 job 171078	Firmed	1/31/18	2 Ea	0 Ea	2 Ea	\$25.00/Ea	\$50.00
Grand Total:											\$650.00

Order Notes

CL

Plex 1/30/18 11:19 AM dart.lavoie.chantal